QUARTERLY STATUS REPORT #11

Period: 1 March 1968 - 31 May 1968

Contract: NASA Contract # NSR 12-001-019

Submitted by:

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Principal Investigator

Institute for Astronomy
University of Hawaii

May, 1968

During the report period, work has continued satisfactorily on the construction of a planetary and stellar telescope for Mauna Kea. Satisfactory progress has also been made in the design and fabrication of associated observing equipment. We have, unfortunately, suffered considerable delay in the completion of the telescope due to unprecedentedly heavy snowfalls in the area. Details of the work accomplished in this period are set out below.

1. Mounting

Assembly of the telescope is continuing at the L & F plant at Los Angeles where it appears to be going ahead for scheduled completion of mid-July. The progress has been closely followed by the principal investigator and the observatory engineer through visits to the plant and telephone communication. The schedule is acceptable to us because of delays in the building construction.

2. Optics

The primary mirror is apparently ready for testing at Perkin-Elmer (Costa Mesa), and the latest report was that the secondaries are undergoing final hand polishing. Arrangements for the final testing are being set up with Dr. I. S. Bowen, of the Mount Wilson & Palomar Observatories, as consultant to the Institute for Astronomy. Dr. Bowen kindly offered to assist us with this at the time the contract was negotiated with Perkin-Elmer.

3. Coude´ Spectrograph

The #1 mirror for the coude´ spectrograph, which was to have been delivered in April, has not yet been tested although our report from the company (Davidson Optronics) is that the system is essentially ready for testing. We have received from them a flat for grating testing. We are not at this time concerned that receipt of the mirror will delay completion of the coude´ spectrograph.

The coude´ spectrograph frame, and its support, have been shipped to Hilo and transported to the top of Mauna Kea. We are presently arranging with the observatory contractor to set the frame in position before the roof of the coude´ room is poured.

The grating testing equipment is mechanically complete and has been set up in a laboratory at the Institute. The photoelectric detector to allow determination of the blaze efficiency and ghost intensities is under construction. The first grating from the manufacturer was damaged in ruling and a new one has been promised for June. This will allow adequate time for checkout and acceptance in terms of the grating contract.

Other mechanical parts of the coude´ spectrograph (the #1 mirror mount, grating and collimator mounts) are being constructed, from our

designs in the Institute's machine shop or by local fabricators. Slit instrumentation (comparison sources, slit viewing mechanism, slit opening and decker mechanisms) has been fully designed.

4. Auxiliary Equipment

Almost all parts of the Cassegrain spectrograph are finished and preliminary assembly of the instrument is in progress. The camera (being fabricated by Tinsley) is proceeding on schedule. The Cassegrain instrument adaptor which houses the field-finder, field-correcting lens system, and low precision offset guider has been designed. The other adaptor (to contain the high precision offset guider) has not yet been detailed. The camera plate holder for 4" x 5" plates is currently under design. The correcting lens system for the Cassegrain focus has been specified for bid. Sinton has completed a highly promising design for a Barlow lens achromatic from about 3200 Angstroms to one micron, for the Cassegrain focus.

5. Control and Drive System

The IBM 1800 Process Controller is operating satisfactorily and programs continue to be written and checked out with the aid of an electronic simulator. The Boller and Chivens control system, which is being fabricated in Los Angeles to a design closely similar to that of the Arizona telescope, is preceding satisfactorily according to the manufacturers and our personal inspections and appears to have worked satisfactorily on the University of Arizona telescope.

6. Building

Inclement weather on Mauna Kea has further delayed the construction schedule which is now estimated to be three months behind. We hope for clear weather from now on; this would be normal, however this year has been marked by such unusual weather that we can do no more than hope for good conditions for the building. The principal problem facing the contractor (that of getting the concrete footings above ground) has certainly been overcome and we are hopeful that work can proceed satisfactorily from this stage.

7. Land Acquisition

The University of Hawaii has received a proposed draft of a 65 year lease agreement from the State, giving us a measure of control required for an area on Mauna Kea of 2.5 mile radius centered on the summit. The lease provides acceptable guarantees to secure the site from inimical operations however some negotiation remains to be completed.

8. Personnel

Personnel associated with this program in the period covered by this report are listed below:

Barclay, James	Research Associate
Boesgaard, Hans	Research Engineer
Brady, Barbara	Administrative Assistant
Byrne, Joseph (1/2 time)	Project Administrative Officer
DeMello, Joseph	Research Associate
Emarine, Lester (1/2 time)	Research Associate
Endo, Jack (1/2 time)	Research Associate
Enos, Ernest	Research Associate
Harwood, James (1/2 time)	Research Associate
Hathaway, Glen	Research Associate
Kawamura, Setsuji (1/2 time)	Research Associate
King, Mary Jane (2/3 time)	Instrument Designer
Loh, JoAnn (1/2 time)	Assistant in Research
McKnight, Dennis (1/2 time)	Assistant in Research
O'Brien, Leonard	Research Associate
Phelps, Thomas	Research Associate
Roth, Herman	Research Associate
Sjoberg, Deborah	Research Associate
Stahlberger, Werner	Instrument Mechanician
Vargas, Leo	Research Associate
Williamson, Ray	Assistant Astrophysicist

Plus part-time student helpers not mentioned individually.